

Supplementary Figure Legends

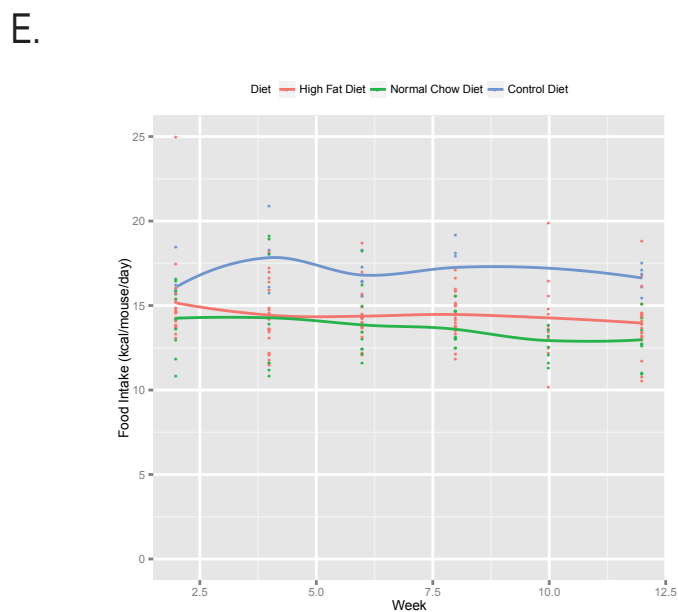
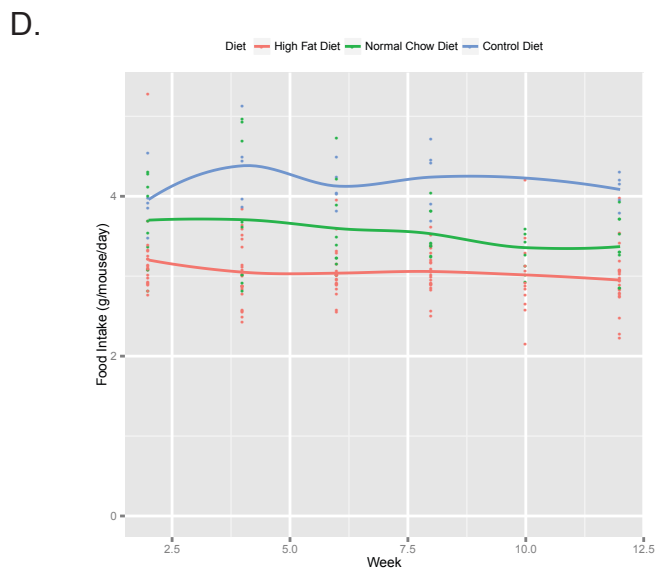
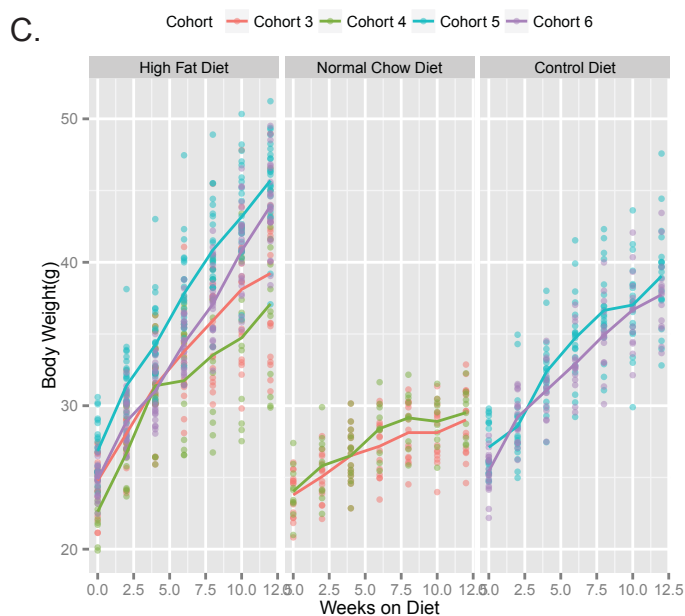
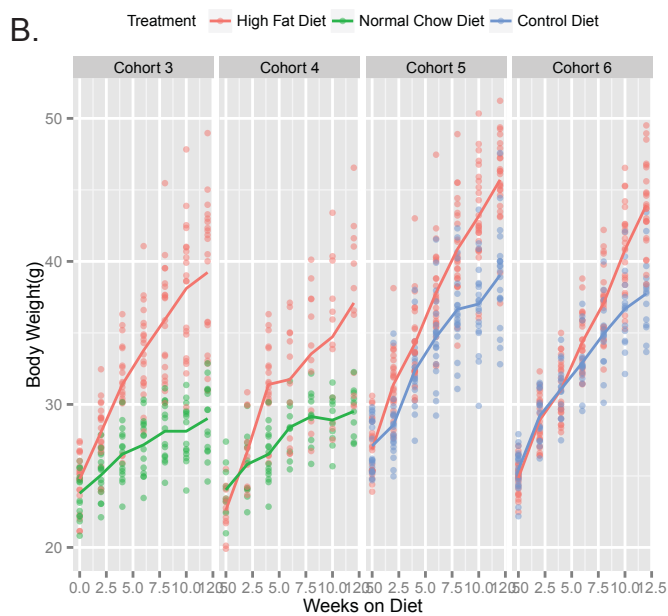
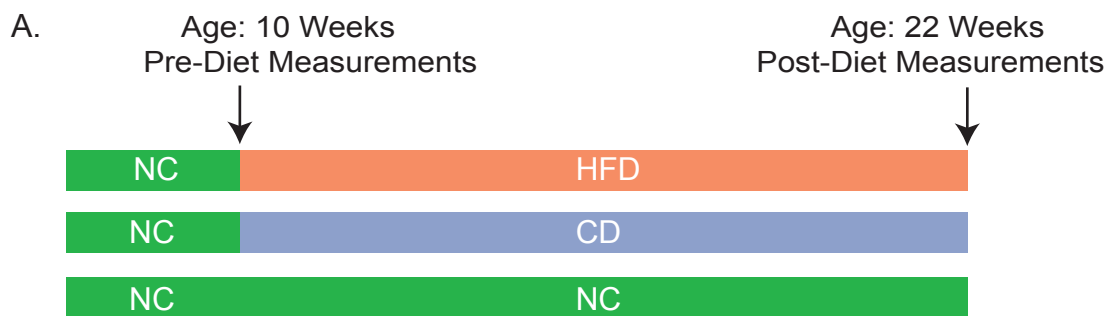
Supplementary Figure 1: High Fat Diet fed mice gain significantly more weight than Control Diet and Normal Chow diet fed mice. A) Schematic of dietary treatments. Mice were fed NCD from birth to 10 weeks, whereupon the diet was then changed to HFD, CD or remained on Normal Chow for the following 12 weeks. B) Body weights across all studied treatment groups separated by cohorts starting at 10 weeks of age. C) Weight gain across all cohorts treatment groups separated by diet. Food intake per diet over the length of the 12-week diet treatment measured in kcal (D) or grams (E). Food was weighed at the start and conclusion of each 2-week measurement period and each dot represents a single cage at that time point.

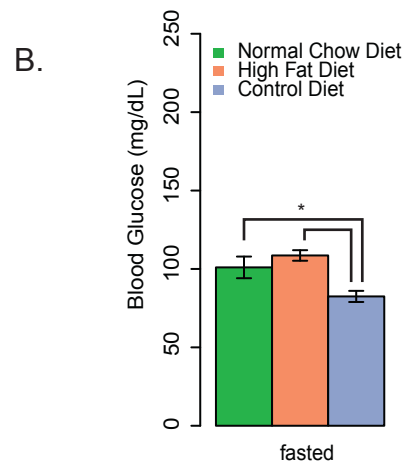
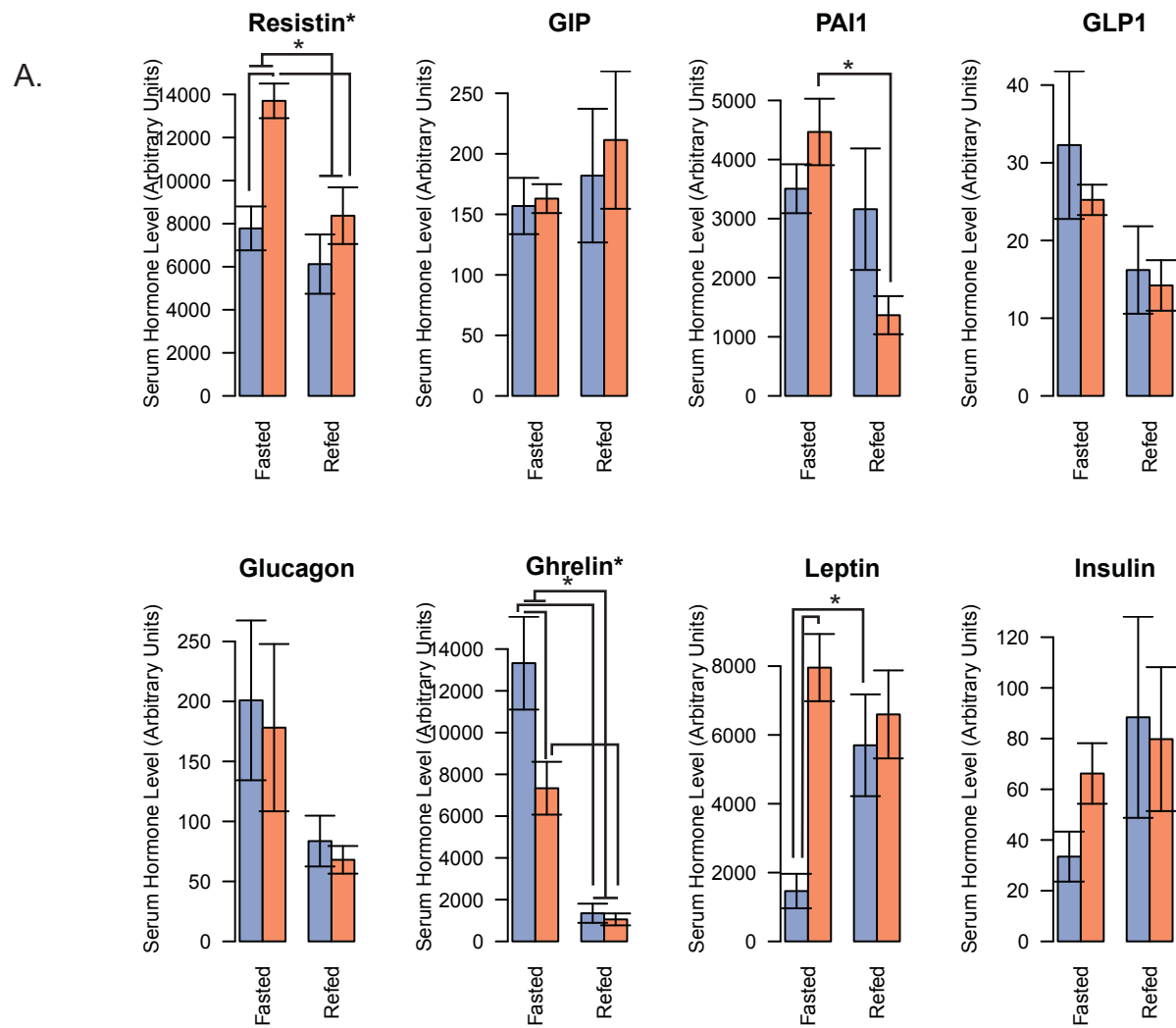
Supplementary Figure 2: Post-diet hormones hormone levels are similar to previously investigated levels. A) Hormone levels in post-diet serum for HFD and CD mice. Fasted mice were fasted for 16 hours prior to blood collection. Re-Fed mice were given the indicated diet for 6 hours following the 16-hour fast prior to blood collection. Asterisk on the name indicates $p < 0.05$ for the diet term by 2-Way ANOVA. Also indicated is that the feeding term (fasted vs re-fed) was significant for Resistin, GLP-1 and Ghrelin and several significant post-hoc t-tests after a significant ANOVA result. B) Blood glucose levels of post-diet fasted and re-fed mice across all treatment groups. Asterisk indicates Tukey test following a significant ANOVA result (B).

Supplementary Figure 3: *ob/ob* mice exhibit obesity and hyperglycemia. A) Weights of male *ob/ob* and wild-type littermates on BTBR and C57BL/6J backgrounds. B) Fasting glucose levels between *ob/ob* knockout and wild-type mice. Asterisk indicates $p < 0.01$ via a Wilcoxon rank sum test.

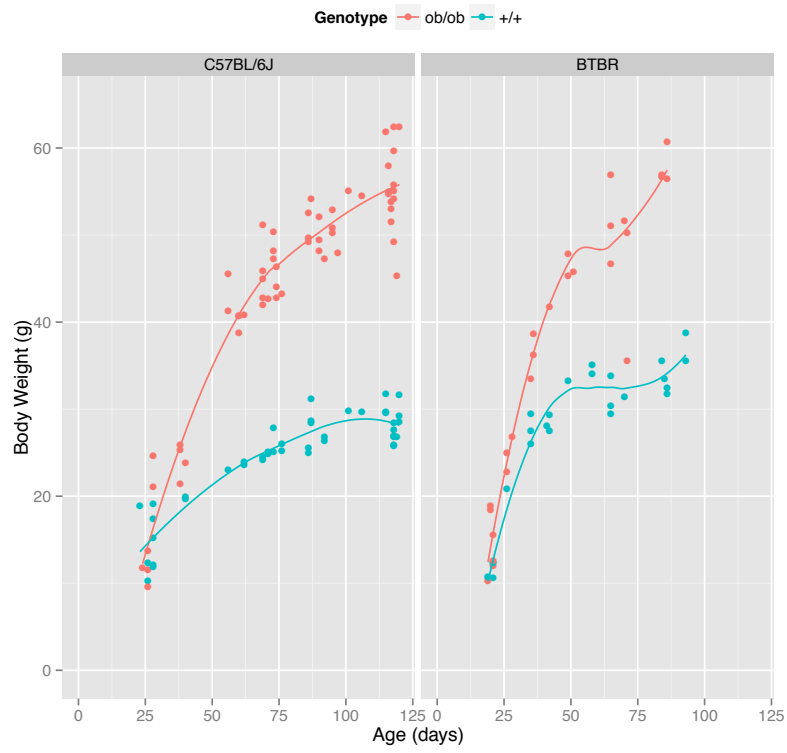
Supplementary Figure 4: Larger did not have a suppressive on the weight of other mice within the same cage. The body weight from the cages containing the 5 heaviest mice in our cohort (with the heavy mouse excluded) was compared to the average of all other mice. No difference was detected between these groups.

Supplementary Figure 5: Fasting induced weight loss in *ob/ob* mice. 120 day old *ob/ob* mice were fasted for 16h and the percent weight loss upon fasting was determined. Asterisk indicates $p < 0.05$ via a Wilcoxon rank sum test.





A.



B.

